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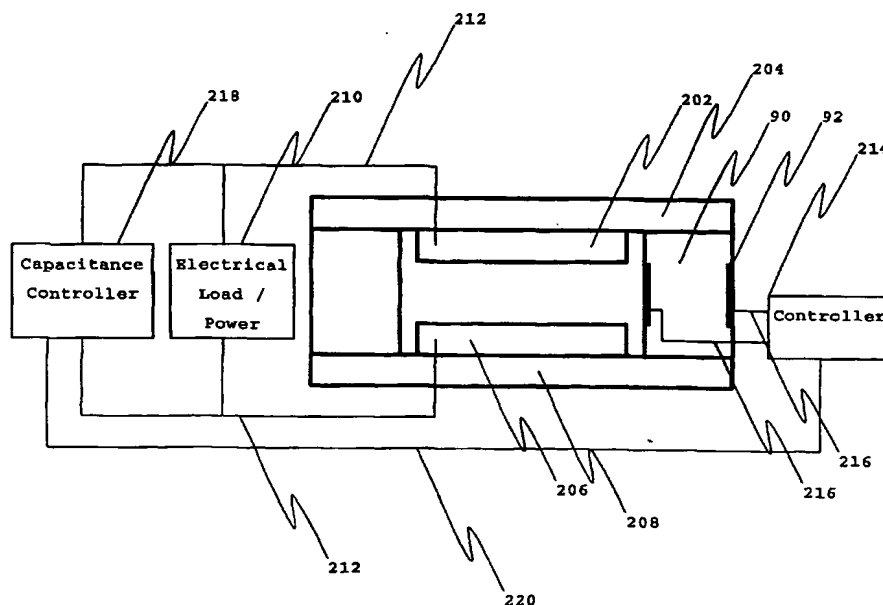
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(54) Title: THERMIONIC VACUUM DIODE DEVICE WITH ADJUSTABLE ELECTRODES



(57) **Abstract:** In accordance with one embodiment of the present invention, a Gap Diode is disclosed in which a tubular actuating element serves as both a housing for a pair of electrodes (92) and as a means for controlling the separation between the electrode pair. In a preferred embodiment, the tubular actuating element (90) is a quartz piezo-electric tube. In accordance with another embodiment of the present invention, a Gap Diode is disclosed which is fabricated by micromachining techniques in which the separation of the electrodes (202, 206) is controlled by piezo-electric, electrostrictive or magnetostrictive actuators. Preferred embodiments of Gap Diodes include Cool Chips, Power Chips, and photoelectric converters.